## HOGAN & HARTSON

Writer's Direct Dial 202/637-5706

March 12, 1999

COLUMBIA SQUARE 555 THIRTEENTH STREET, NW WASHINGTON, DC 20004-1109

> TEL (202) 637-5600 FAX (202) 637-5910

#### BY HAND DELIVERY

The Secretary
Federal Communications Commission
The Portals -- Room TW-325
445 12th Street, S.W.
Washington, DC 20554

Re:

Alabama Educational Television Commission Clarification to Petition for Rule Making for

Amendment to Section 73.622 of the Commission's Rules

Digital Television Table of Allotments

(Mt. Cheaha, Alabama)

Dear Madam Secretary:

On behalf of Alabama Educational Television Commission ("AETC"), the licensee of WCIQ-TV, Mt. Cheaha, Alabama (the "Station"), enclosed please find an original and four copies of a revised Technical Exhibit to the above-referenced Petition for Rule Making, which was filed with the Commission on February 17, 1999 (the "Petition"). The attached Technical Exhibit, which includes both an engineering statement and a completed technical section of an FCC Form 301, better reflects the Commission's specifications in a recent Public Notice with regard to calculating interference resulting from proposed changes in digital television allotments. 1/ Accordingly, AETC respectfully requests that the Commission replace the Technical Exhibit that was filed with the Petition with the attached.

Please file-stamp the additional copy of this amendment, and return it to the undersigned. Please also direct communications to the undersigned.

Respectfully submitted,

HOGAN & HARTSON L.L.P.

FEDERAL COMMENCATIONS COMMERCICA

No. of Copies rec'd O+ 4

T. 577111 7

Attorneys for the Alabama Educational Television Commission

Enclosures

\\DC - 0/0 - 0839177 01

<sup>1/</sup> Public Notice, Additional Application Processing Guidelines for Digital Television (issued on August 10, 1998).

## EXHIBIT 1

(Revised Technical Statement)

# ENGINEERING STATEMENT OF RYAN WILHOUR ON BEHALF OF EDUCATIONAL TELEVISION COMMIS

## ALABAMA EDUCATIONAL TELEVISION COMMISSION LICENSEE OF TV BROADCAST STATION

#### WCIQ-TV, MT. CHEAHA, AL

The Alabama Educational Television Commission is licensed to operate WCIQ-TV on channel 7 with an ERP of 316.0 kW at an antenna height of 911 meters above mean sea level ("AMSL"). The FCC allocated channel 56 for DTV service using an ERP of 1,000 kW at an antenna height of 610 meters above average terrain ("AAT") to replicate the licensed channel 7 Grade B coverage contour. This will require the purchase of a new transmitting plant consisting of a high power UHF DTV transmitter, large coaxial transmission line or waveguide, and a medium gain transmitting antenna. The UHF DTV will consume substantially more power than the present VHF transmitter. Furthermore, DTV channel 56 is not within the "core" channels planned for television broadcasting after the transition from NTSC to DTV is complete. Therefore, at the end of the transition period WCIQ-TV would change to channel 7 for its permanent DTV operation requiring the purchase of another new DTV transmitter. At that time The Alabama Educational Television commission would be left with a relatively new UHF DTV transmitting plant which would be very costly to decommission, and for which it has absolutely no use.

As an alternative, I have completed studies that indicate that channel 4 with an ERP of 6.3 kW at an effective antenna height of 562 meters above average terrain could be used to achieve the same coverage area as the current NTSC operation and would also eliminate the need for a future modification. Attached to this document is a sample application for the requested channel 4 amendment. This request for change in DTV channels meets the required mileage separation to other NTSC / DTV co-channel and adjacent channel stations as described in section §73.623(d). Therefore, it is respectfully requested that the DTV channel allotted to WCIQ-TV, at Mt. Cheaha be changed from channel 56 to channel 4.

This engineering statement has been prepared by Ryan C. Wilhour who is a graduate of the University of Florida with a Bachelor of Science degree in electrical engineering, and is an associate of Kessler and Gehman Associates, Inc., with offices in Gainesville, Florida.

KESSLER AND GEHMAN ASSOCIATES, INC.

(Ryan C. Wilhour

**Engineering consultant** 

March 1, 1999

APPLICATION FOR CONSTRUCTION PERMIT TELEVISION BROADCAST STATION WCIQ DTV CHANNEL 4 ERP 6.3 kW AT 562 METERS ABOVE AVERAGE TERRAIN ALABAMA EDUCATIONAL TELEVISION COMMISSION MT. CHEAHA, ALABAMA



					T				
	· 				FOR C	COMMISSION USE OF	NLY		
SECTION V-D - DTV BROADCAST ENGINEERING			ENGINEERING DAT	` <b>A</b>	SSB R	eferral Date			
					Referre	ed By			
		Applicant				Call Letters (if issued)	•		
Al	ALABAMA EDUCATIONAL TELEVISION COMMISSION			WCIQ-DT					
		Questions 1-5 of the Certifi in Items 1-22, below. If an			and info	ormation for the prop	osed fac	ility,	25
con	structio	tion Checklist: A correct on permit. An answer of "N on permit can be granted.							
1	The p	proposed DTV facility compl	lies with 47 C.F.R. Secti	on 73.622 in the	e follow	ing respects:			
	(a)	It will operate on the DTV	channel for this station	as established in	n 47 C.F	F.R. Section 73.622.		Yes	No No
	(b)	It will operate from a tra reference site for this static				1 miles) of the DTV	$\boxtimes$	Yes	No
	(c)	It will operate with an efterrain (HAAT) that do restablished in 47 C.F.R. Se	not exceed the DTV ref				$\boxtimes$	Yes	No No
2.	or the	proposed facility will not have e general public to levels of herefore will not come within	RF radiation exceeding	the applicable	_	•			No No
3.				No					
4.	The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable.			No No					
5.	The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.			No					
Ap	plicatio	on Data:							
1. (	Channe (a) D	el OTV Channel No.	4	2. Principal	l commu	nity to be served:			
	Ci		City or Town	n			State	.	
		Associated analog TV station channel no., if any	7	MT. CHEAR	HA			AL	
3.	Effec	tive radiated power (average	power): (in the main lob	e of radiation, i	if directio	onal)	<del></del>	6.3	kw
4.	Heig	ht of antenna radiation cente	r above average terrain (	HAAT): (to the	e nearesi	t meter)		562	meters
	9		٠	, q		,			

#### Section V-D -D TV BROADCAST ENGINEERING DATA (Page 2)

5.	Purpose of Application: (check appropriate boxes)		
	Construct a new (main) facility	Construct a new auxiliary facility	
	Modify construction permit for main facility	Modify construction permit for aux	iliary antenna
	Modify licensed main facility	Modify licensed auxiliary antenna	
_	rpose is to modify, indicate the nature of change(s) by checl orizations affected.	king appropriate box(es) and specify the file n	umber(s) of the
	Antenna supporting structure height	Effective radiated power	
	Antenna height above average terrain	Channel	
	Antenna location	Antenna system	
	Other (summarize)		
I	File Number(s)		,
Latit	North Latitude or West Longitude will be presumed. (The C	y South Latitude and East Longitude where a	pplicable; otherwise,
7.	(a) Elevation (to the nearest meter)		
	(1) of site above mean sea level;		<b>716</b> meters
	(2) of the top of supporting structure above ground (i and lighting, if any); and	including antenna, all other appurtenances,	meters
	(3) of the top of supporting structure above mean sea	level [(a)(1) + (a)(2)].	
	(b) Height of radiation center: (to the nearest meter)		
	(1) above ground; and		148 meters
	(2) above mean sea level [(a)(]) + (b)(1)];		864 meters
8.	Attach as an Exhibit sketch(es) of the supporting structurabove. If mounted on an AM directional array element, spot towers, as well as location of any FM radiator. * SEE AT	pecify heights and orientations of all array	Exhibit No. EXHIBIT 2*

### Section V-D -D TV BROADCAST ENGINEERING DATA (Page 3)

(a) Manufacturer	DIELECTRIC	(b) Model No. THP-0-2-1	
(c) Is a directional	antenna proposed?		Yes No
	fy major lobe azimuth(s) <b>N/A</b> a specified in 47 C.F.R. Section 73.6	degrees True and attach as an 25(c).	Exhibit No. <b>N/A</b>
(d) Is electrical bea	am tilt proposed?		Yes No
If Yes, specifi C.F.R. Section	· <del></del> •	and attach as an Exhibit all data specified in 47	Exhibit No.
(e) Is mechanical b	peam tilt proposed?		Yes No
	wa ma degrees mechanical beam to specified in 47 C.F.R. Section 73.6	ilt toward azimuth <u>NA</u> True and attach as an 25(c).	Exhibit No.
(f) The proposed	antenna is: (check only one box)		
Morizont Horizont	tally polarized Circularly pola	rized Elliptically polarized Ott	ner: N/A
	mounted on an antenna structure whosed antenna installation?	nich has been registered with the Commission,	Yes No
If Yes, provide the 15.	e seven digit registration number and	d, unless item 11 also applies, proceed to item	1036421
11. Has the owner of the will include the proj		on for registration with the Commission that	Yes No
If wes provide the d			
11 yes, provide the t	date FCC Form 854 was filed and pro	oceed to item 15.	N/A
12. (if applicable) If the	antenna structure is not yet register as the FAA previously determined th	red but will be under the Commission's phased at the structure would not adversely affect	
12. (if applicable) If the registration plan, ha	e antenna structure is not yet register as the FAA previously determined th tion?	red but will be under the Commission's phased	Yes No
<ul> <li>12. (if applicable) If the registration plan, ha safety in air navigat</li> <li>If Yes. proceed to it</li> <li>13. Antenna structure we by natural terrain of congested area of a</li> </ul>	e antenna structure is not yet register as the FAA previously determined the tion?  tem 15.  vill be shielded by existing structure or topographic features of equal or a city, town or settlement where it is lided that it will not adversely affect sets.	red but will be under the Commission's phased	Yes No

\* SEE ATTACHED ENGINEERING STATMENT

#### 14. Antenna structure does not otherwise meet FAA Notification criteria as defined under 47 C.F.R. Section 17.7 and therefore does not require registration. If Yes, give reason below. N/A Yes Yes 15. Is the supporting structure the same as that of another station(s) or proposed in another pending application(s)? WCIQ-TV, BLET405 If Yes, give call letter(s) or file number(s) or both, Yes\* 16 Does the application propose to correct previous site coordinates? If Yes, list old coordinates. 33 29 ' 07 85 48 '33 Latitude Longitude 17. Attach as an Exhibit a topographic map that shows clearly, legibly, and accurately, the location of the Exhibit No. **EXHIBIT 5\*** proposed transmitting antenna. This map must comply with the provisions of 47 C.F.R. Section 73.625(b). The map must further display clearly and legibly the original printed contour lines and data as well as latitude and longitude markings, and must bear a scale of distance in kilometers. Exhibit No. 18. Attach as an Exhibit a map (Sectional Aeronautical Chart or equivalent) which shows clearly, **EXHIBIT 6\*** legibly, and accurately, and with the original printed latitude and longitude markings and a scale of distance in kilometers: (a) the proposed transmitting location, and the radials along which profile graphs have been prepared; (b) the DTV coverage contour as established in 47 C.F.R. Section 73.625(b); and (c) the legal boundaries of the principal community to be served. 19. Terrain and coverage data (to be calculated in accordance with 47 C.F.R. Section 73.625(b)) Source of terrain data: (check only one box below) Linearly interpolated 30-second database (Source: . (Source: DEFENSE MAPING INDUSTRY Linearly interpolated 3-second database 7.5 minute topographic map

Section V-D -D TV BROADCAST ENGINEERING DATA (Page 4)

\* SEE ATTACHED ENGINEERING STATEMENT

Other (briefly summarize)

#### Section V-D -D TV BROADCAST ENGINEERING DATA (Page 5)

Radial bearing (degrees True)	Height of radiation center above average elevation of radial from 3 to 16 kin (meters)	Predicted distance to the DTV Coverage Contour (kilometers)
* 90	537	118
0	616	124
45	564	120
90	537	118
135	545	118
180	463	112
225	524	117
270	611	123
315	633	125

<sup>\*</sup>Radial through principal community, if not one of the major radials. This radial should NOT be included in the calculation of I MAT.

20.	Does the proposed facility satisfy the interference protection provisions of 47 C.F.R. Section 73.623(a)? (Applicable only if Certification Checklist items I (a), (b), or (c) are answered "No.")	Yes	No
	If No, attach as an Exhibit justification therefore, including a summary of any related previously granted waivers.	Exhibit No.	
21.	If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if Certification Checklist item 3 is answered	Exhibit No.	
22. E	Invironmental Statement. (See 47CF.R. Section 1.1301 et seq.)		
	(a) If a Commission grant of this application comes within 47 C.F.R. Section 1.1307, such that it	Exhibit No.	

- (b) If No, explain briefly why not. THE PROPOSED CONSTRUCTION WOULD HAVE NO SIGNIFICANT ENVIRONMENTAL IMPACT AS DEFINED IN §1.1307 OF THE FCC RULES. \*
- (c) Pursuant to OST Bulletin No. 65, the applicant must explain in an Exhibit what steps will be taken to limit the RF radiation exposure to the public and to persons authorized access to the tower site. In addition, where there are multiple contributors to radio frequency radiation, you must certify that the established RF radiation exposure procedures will be coordinated with all stations.

Assessment required by 47 C.F.R. Section 1. 1 31 1.

#### Section V-D -D TV BROADCAST ENGINEERING DATA (Page 6)

CERTIFICATION
I certify that I have prepared this Section of this application on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name (Typed or Printed)	Relationship to Applicant (e.g., Consulting Engineer)	
RYAN C. WILHOUR	CONSULTING ENGINEER	
Signature	Address (include ZIP Code)	
	507 NW 60TH ST. SUITE C GAINESVILLE FL 32605	
Date	Telephone No. (include Area Code)	
JANUARY 28, 1999	352-332-3157	

ENGINEERING STATEMENT OF RYAN C. WILHOUR OF THE FIRM OF KESSLER AND GEHMAN ASSOCIATES, INC., CONSULTING ENGINEERS IN CONNECTION WITH AN APPLICATION FOR THE ALABAMA EDUCATIONAL TELEVISION COMMISSION FOR A CONSTRUCTION PERMIT FOR TELEVISION BROADCAST STATION WCIQ-TV WHICH WOULD OPERATE ON DTV CHANNEL 4 WITH A MAXIMUM EFFECTIVE RADIATED POWER OF 6.3 KILOWATTS HORIZONTALLY POLARIZED AT AN EFFECTIVE ANTENNA HEIGHT OF 562 METERS ABOVE AVERAGE TERRAIN IN THE VICINITY OF MT. CHEAHA, ALABAMA

I, Ryan C. Wilhour, am an associate of Kessler and Gehman Associates, Inc. with offices in Gainesville, Florida. I am a graduate of the University of Florida with a Bachelor of Science Degree in electrical engineering.

This firm has been employed by the Alabama Educational Television Commission to make engineering studies and to prepare the engineering portion for construction permit for television broadcast station WCIQ-TV to operate on DTV channel 4 with a maximum effective radiated power of 6.3 kilowatts horizontally polarized at an effective antenna height of 562 meters above average terrain in the vicinity of Mt. Cheaha, Alabama.

The Alabama Educational Television Commission is the licensee, File No. BLET405, of the television broadcast station WCIQ-TV that operates on NTSC channel 7.

#### **ATTACHED FIGURES**

In carrying out the engineering studies the following attached figures were prepared by me or under my supervision:

- 1. Proposed engineering specifications (Exhibit 1)
- 2. Elevation drawing of the antenna system (Exhibit 2)
- 3. Antenna Elevation Pattern (Exhibit 3)
- 4. USGS 7.5 minute topographic quadrangle showing the proposed transmitter location and coordinate lines (Exhibit 5)
- 5. Map showing the predicted DTV coverage contour (Exhibit 6)
- 6. Maps showing the proposed de minimis interference to co-channel and adjacent channel TV stations (Exhibit 7A Exhibit 7F).

#### TRANSMITTER LOCATION

It is proposed to use the existing support structure extending 152 meters above ground upon which the proposed Dielectric THP-O-2-1 horizontally polarized non-directional antenna will be side mounted as demonstrated in Exhibit 2. The FCC tower registration reflects the correct coordinates, ground elevation, overall height AMSL, and overall height AGL for the existing tower. Thus, this application was prepared to these specifications.

The proposed construction would have no significant environmental impact as defined in §1.1307 of the FCC Rules. The NTSC transmitter will continue to operate and will produce an effective radiated power of 316.0 kW which will produce a power density on the ground at the base of the tower of 0.2 mW/cm<sup>2</sup> which is 20.0% of the maximum allowable exposure assuming the beam maximum of the antenna is directed toward the ground. The DTV operation would similarly produce a power flux density of 0.01 mW/cm<sup>2</sup> which is 0.99% of the maximum allowable exposure. Combined the power density would be 20.99% of the maximum allowed by the ANSI requirements. However, since the relative field of the vertical radiation patterns are less than 0.15 at the vertical angles more than 5 degrees below the horizon, the maximum possible power density at any point on the ground would be much less than the maximum allowed exposure level of 1.00 mW/cm<sup>2</sup> for controlled or occupational exposure and 0.2 mW/cm<sup>2</sup> for uncontrolled exposure. The applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off in order to protect maintenance workers on the tower. In addition the applicant will erect a fence and install warning signs to keep trespassers away from the tower.

The applicant accepts full responsibility for the elimination of any objectionable interference including that caused by intermodulation to facilities in existence or authorized prior to the grant of this application.

WCIQ was initially allotted an ERP of 1000.0 kW on channel 56 with an antenna HAAT of 610 M. Channel 56 is not in the final DTV core spectrum (channels 2 - 51) and thus would require modification before December 31, 2006. As an alternative this application proposes to use channel 4 with a reduced ERP to achieve the same coverage area as its NTSC facility. This request for a change in DTV channels meets the required mileage separation to other NTSC / DTV co-channel and adjacent channel stations as described in section §73.623(d).

The maps depicted in Exhibit 7 demonstrate the areas of interference based on Longley - Rice version 1.2.2 to DTV/NTSC stations that fail to meet the spatial requirements specified by the FCC. All of the exhibits demonstrate that no new interference is caused within the surrounding channel's service areas.

KESSLER AND GEHMAN ASSOCIATES, INC.

RYAN C. WILHOUR Engineering Consultant

#### WCIQ - DT MT. CHEAHA, ALABAMA

#### **ENGINEERING SPECIFICATIONS**

A.	Transmitter Site North Latitude West Longitude	33° 29' 06" 85° 48' 32"	
	Street Address	At Cheaha Mountain 8.3 Alabama.	Miles SE of Munford,
B.	Proposed Facility DTV Channel	Number Frequency	4 66-72 MHz
C.	Antenna Height Height of site above mean Overall height of structure (Including all appur Overall height of structure (Including all appur Height of site above avera Effective height of antenn Effective height of antenn	e above ground rtenances) e above mean sea level rtenances) age terrain a above ground a above average terrain	716m 176m 892m 414m 148m 562m 864m
D.	Antenna Parameters - Ho Maximum antenna gain in Maximum antenna gain in Maximum effective radiate In beam maximum Maximum effective radiate In horizontal plane	beam maximum horizontal plane ed power	4.31dB 4.31dB 8.00dBk 6.30kW 8.00dBk 6.30kW

KESSLER & GEHMAN
TELECOMMUNICATIONS CONSULTING ENGINEERS
507 N.W. 60th Street, Suite C
Gainceville, Florida 32607

WCIQ - DT MT. CHEAHA, ALABAMA

990128

EXHIBIT 1

#### **ELEVATION VIEW**

**EXISTING HARRIS** TAB-12H **NTSC ANTENNA** 

**PROPOSED DIELECTRIC** THP-0-2-1 **DTV ANTENNA** 

**GUYED TOWER AND** ANTENNA TO BE LIGHTED AND PAINTED IN **ACCORDANCE WITH FCC** REQUIREMENTS

SITE ELEVATION: 716 M AMSL

**OVERALL HEIGHT AGL:** 

**OVERALL HEIGHT AMSL:** 

**DTV RADIATION CENTER AGL:** 

**DTV RADIATION CENTER AMSL:** 

176 M

892 M

148 M

864 M

**COORDINATES:** 

N. LATITUDE

33° 29' 06"

176 M

175 M

164 M

152 M

152 M

148 M

W. LONGITUDE 85° 48' 32"

**NOTE: NOT TO SCALE** 

IMUNICATIONS CONSULTING ENGINEERS

507 N.W. 60th Street, Suite Gainesville, Florida 32607

WCIQ - DT

MT CHEAHA, ALABAMA

990128

**EXHIBIT 2** 



Date **Call Letters** Location Customer Antenna Type 990128 WCIQ-DT Channel MT. CHEAHA, AL ALA. EDU. TV COM. THP-O-2-1

#### **ELEVATION PATTERN**

RMS Gain at Main Lobe RMS Gain at Horizontal Calculated / Measured

2.1 (3.22 dB) 2.1 (3.22 dB)

**Beam Tilt** Frequency Calculated Drawing #

0.00 Degrees 69.00 MHz 02H02100

0.9 8.0 0.7 0.6 0.5 0.4 0.3 0.2 0.1

Degrees below horizontal

TELECOMMUNICATIONS CONSULTING ENGINEERS 507 N.W. 60th Street, Suite C Gainerville, Florida 32607

WCIQ - DT

MT. CHEAHA, ALABAMA

990128

**EXHIBIT 3** 















